South African Journal of Botany 2001, 67: 177–182
Printed in South Africa — All rights reserved

SOUTH AFRICAN JOURNAL
OF BOTANY
ISSN 0254-6299

A preliminary survey of plants used in traditional medicine in the Grahamstown area

B Matsiliza* and NP Barker

Department of Botany, Rhodes University, PO Box 94, Grahamstown 6140, South Africa
** Corresponding author, e-mail: matsiliz@rhobot.ru.ac.za*

Received 1 November 1999, accepted in revised form 20 May 2000

On the basis of interviews with traditional healers, diviners and villagers in the Grahamstown area, twenty-four plants used in traditional medicine are reported. The preparation and utilisation of these plants is as varied as the plants themselves. Some of the plants were previously known to ethnobotanists but because of the diversity of tribal groups in South Africa, new preparations of these plants were discovered. This also suggests that there are gaps in recorded knowledge of medicinal plant usage, therefore more research on traditional practice still needs to be undertaken before the knowledge is lost. The curative properties of these plants appear to be well known to the healers who use them but many of them still have to be chemically tested.

Introduction

Most tribes in South Africa still use prescriptions from herbs and shrubs and other materials in their traditional medicine. The medicinal plants used in Grahamstown are no exception and are a constituent of traditional culture. Unfortunately much of the traditional culture and knowledge is in danger of being lost with the increasing modernisation of society, especially by the development of roads, communication, the migration of people from villages to cities and the influx of modern medicine. Furthermore, ethnobotanical information is not always passed down by word of mouth from one generation to the next, so the need to record and utilise the current wealth of ethnobotanical knowledge remains important for ethnopharmacological, cultural and historical purposes. Higher plants, some of which are threatened with extinction, are also used as sources of pharmaceuticals and as ingredients of traditional medicine. Furthermore, the compounds they contain may serve as templates for new synthetic drugs (Omulokoli *et al.* 1997).

Herbalism is not only practised as an alternate health option and source of employment but also to meet the growing urban demand for traditional medicine. However, the increase of human population, increase in the need for certain plants, the incorrect way of harvesting the plants and the competition with other forms of land use has led to a decrease in the availability of wild plant resources (Martin 1995). Due to urbanisation and the increased commercialisation of the herbal trade in South Africa, the activity of harvesting medicinal plants, formerly the specialist domain of traditional healers, has also become the domain of untrained commercial gatherers who supply the urban areas with plants (Williams 1997). An increase in the demand of traditional medicine has resulted in other plants being used to substitute indigenous plants that are becoming scarce (Williams 1996).

Ethnobotanical studies have been done in many areas in South Africa (Bhat and Jacobs 1995, Ellis 1986, Metelerkamp and Sealy 1983, and others). The information gathered from these studies can be used to identify the important medicinal plants, those in great demand as well as those threatened with over utilisation.

A few studies have been done in the Eastern Cape (Bhat and Jacobs 1995, Dold and Cocks 1996, Hirst 1990, Broster 1982, Smith 1895), but until recently not much in smaller centres such as Grahamstown. Studies in neighbouring areas show that traditional medicine is still in great demand, especially in rural areas (Bhat and Jacobs 1995, Dold and Cocks 1996). The present study aims to rescue the disappearing knowledge of medicinal plants by combining the collection of voucher specimens with information gathered from interviews with traditional healers, diviners, herbalists and other people who know and use the plants for medicinal purposes. The information gathered will be documented and stored in the Selmar Schonland Herbarium (GRA) and will probably be used in the proposed construction of a nursery and garden dedicated to ethnobotanical species in the National Arboretum for Peace and Reconciliation. It is hoped that by making people aware of the importance of these plants and many others, they will learn to appreciate indigenous plants. Also by making them aware of the problems some other parts of South Africa already have in terms of scarcity of some of the important plants, they will see the need to conserve them. It is hoped that all this will help to reinforce links between the community and the environment, which is essential if sustainable utilisation is to be realised.

Study Area

Grahamstown is situated approximately 50 kilometres inland from the Indian ocean and lies on the arterial axis of the old national road between the larger coastal cities of Port Elizabeth and East London. It is situated in a transitional zone between the summer rainfall region to the east and the all year rainfall area of the South Coast. Various vegetation types ranging from karroid vegetation to evergreen woodland, acacia grassland and heathland (Daniel *et al.* 1985) surround the town. The area consists of the commercial centre (the town) with a large residential area almost surrounding the central business district, the townships (mostly Xhosa speaking people) and the farms in Albany and Bathurst districts. The population of the area has increased substantially, from approximately 45 530 in 1980 to 110 000 in 1996 (Grahamstown Health Department). This increase is due to both a high rate of natural increase and an influx from surrounding areas like King William's Town and the former Ciskei.

Methods

Information on the utilisation of plants in the Grahamstown area was collected through direct contact and interviews with herbalists, diviners, traditional healers and other people who know and use the plants for medicinal purposes. This was done over a period of six months, between March and August 1997. Interviews were conducted in the informants' houses, where they do most of their work, and in the field. These interviews were conducted in Xhosa. Informants were asked for the source of their knowledge to eliminate information of secondary nature. Efforts were made to double-check any information provided by asking the opinion of older people or other herbalists.

Three approaches to information gathering were used: Information was gathered by 1) asking what plants in the locality were used in traditional medicine; 2) asking what a particular plant was used for; or 3) on observing an activity (such as preparing medicine for a patient) and enquiring as to the plants used. The first of the three approaches was used as an icebreaker in most cases. The second approach was used in order to cross check the information received. The most rewarding approach was the third one, since the informant was thoroughly familiar with the plants' use.

For collection of plant materials, informants were asked to guide us to the places where the plants grow. An attempt was made to cover as much of the study area as possible. The fresh or dried medicinal plant material was collected and kept for botanical identification. Information on what plants they use, what plant parts they use, what they use them for and how they use the plants was recorded. Informants also provided us with vernacular (Xhosa) names that they use for these plants. All the informants used the same vernacular names. Plants collected as vouchers were identified with the help of the Selmar Schonland Herbarium (GRA) curator, Mr AP Dold. All vouchers were deposited in the Selmar Schonland Herbarium (GRA).

Informants Background and Practice

The informants described below were all interviewed on more than one occasion and provided much of the information on plant usage. All the informants consented to having their information made public. It is difficult to assess how representative this small group is of the ancient traditional practice. However, some of the plants they use and customs they referred to have been previously recorded (Hirst 1990, Lamla 1981, Bhat and Jacobs 1995, Broster 1982) and can thus be considered reliable.

1. Mrs Lindani is a 62-year-old housewife, whose grandfather and aunt had both been diviners. She acquired her expertise from them and she has practised since she was 14 years old. She also trained as a Prophet in the Zion church. As a diviner, she keeps contact with the ancestors, divines the causes of misfortune and illness and sometimes treats the patients.
2. Mr Bonisile Dipi is an 87-year-old traditional healer. His father was a traditional healer. He started practising at the age of 37, after training for three years. He diagnoses, prescribes and sells the medicines for various ailments. He has a certificate from the African Herbalist Dingaka Association (in Zwelitsha, Eastern Cape), giving him the right to work as a traditional doctor anywhere in South Africa. He does most of his work at home and sometimes visits patients in their homes.
3. Miss Fihlani is a middle-aged woman and is the daughter of Mr Dipi (above). She trained as a diviner for three years and has started working, although she is still under her father's supervision.
4. Adolphus is a 49-year-old herbalist who was trained by his father. He considers the use of remedies to be a family secret handed down from one generation to the other. He works in the only herbal shop in Grahamstown. He prescribes and sells medicine to patients and customers. He also works with another man, who is Indian, who uses his traditional (Indian) methods in healing. Sometimes the patients were treated by both (e.g. the Indian man would use his methods in trying to find the cause of the illness and then refer the patient to Adolphus who would give the patient the prescription he/she needs).
5. Zizi (not his real name) is 50 years old. He did not receive any formal training about medicine, but acquired his knowledge by helping the herbalists.

Other people interviewed were the customers (people who went to the shop to buy medicine for themselves or for someone else) and patients who went to see Mr Fihlani. The interviews with the customers were made as informal as possible, e.g. no name taken and no pen and paper. This was done to avoid making customers uncomfortable as most of those we talked to were not happy to talk about why they were there or what they had bought, and wanted their visit to the shop to be kept secret. The interviews with the patients were formal (e.g. What she/he was suffering from and then observed what the informant was preparing for the patient) and notes were taken in some cases with the patients permission. Seven customers and four patients were interviewed. The information gathered from patients and customers was used to double check information that was pre-

viously obtained from the informants and to ascertain that these plants were actually used by other people. The information obtained from these interviews is acknowledged in Table 1.

Results

Medicinal Plant Usage

Twenty-four medicinal plants were identified during the investigation. These plants are listed in alphabetical order according to family and then according to genus and species within the family. This data is presented in Table 1.

The informants claim that all the information they know and that they have provided was obtained through proper training by their counterparts or by consulting their ancestors, in the case of diviners and traditional healers.

Discussion

Some difficulty was experienced during the study in extracting information about the plants from these people. Studies done by Hirst (1990) have shown that appeasing the ancestral spirits is an integral part of the Xhosa medicine. The knowledge of herbal medicines for complex diseases is still confined to mainly practising herbalists or to certain family members of the traditional healers who inherit the knowledge from their forefathers. The knowledge and use of traditional plants is also associated with the supernatural powers, hence rituals follow some of the preparations.

Six of the 24 herbal remedies recorded here are used for pain relief, two for treatment of stomach complaints, five for skin diseases, three to treat infertility, three to treat ear infection, one for heart problems, one for diabetes, one for nose blockage and two to treat respiratory problems. The most commonly used remedies are those used for pain relief and skin diseases. These plants also have various other functions as indicated in the previously recorded uses of these plants, but not by our informants. The diseases that are mostly treated through external applications are inflammations, skin diseases and wounds. Most of the surveyed medicinal plant uses involved using only one plant species.

Except for *Hermannia althaeoides* and *Senecio carnosus*, twenty-two of the plants documented here have been previously recorded in ethnobotanical publications (Hutchings 1996, Watt and Breyer-Brandwijk 1962, Smith 1895, Broster 1982). However, it is important to note that many of the uses recorded here were new except for that of *Sanseviera hyacinthoides* (L.) Druce. This is in part because of the diversity of the tribal groups in South Africa. Eight uses recorded during this study are related to those previously recorded. However, this does not necessarily mean that they are used for the same ailment described by the informants in this study. Thirteen of the plants recorded have previously been chemically screened and some found to have antibiotic, anti-inflammatory and other types of effects (Hutchings 1996, Watt and Breyer-Brandwijk 1962).

Certain plants are used for treating men only, (e.g. *Hermania althaeoides* Link, used for treating impotence) while others are used exclusively for women (e.g. *Kniphofia uvaria* (L.) Oken, used to treat infertility), revealing the specificity with which medicinal plants are prescribed. Further analysis of such gender specific plants could enhance our understanding of the possible different effects of various compounds on the male and female systems.

Three of the species, namely *Haemanthus albiflos, Bulbine alooides* and *Hypoxis hemerocallidea* are known to at least four of the five informants while some of them are known to Mr Dipi and his daughter (who work together) and others are known only to one informant, Mrs Lindani. Six of the plants recorded in this study were also known to customers and patients, who had used them before or bought them for someone else. The customers and patients had no difficulty in identifying these plants but they knew the uses of a few other plants only when they were told their names. It is interesting to note that the species known by Mrs Lindani are mainly used to treat women and for minor ailments in babies and sometimes adults.

Conservation

The conservation status of the plants recorded was investigated and it was found that none of the plants are included in the list of threatened plants of the Eastern Cape (Everard 1988) or in the Red Data book (Hilton-Taylor 1996). This gives the impression that these plants are not threatened. Traditional healers use certain methods to sustain the use of their flora. Adolphus, who works in the herbal shop, sometimes collects the plants and other times buys the plants from people coming from other parts of the country, such as KwaZulu-Natal. The informants interviewed (except Zizi and Adolphus) in Grahamstown still prefer to collect plants themselves and they follow certain rituals when collecting. This is done in a way to protect the plants. For example, they do not collect from a plant where one of the traditional doctors has just collected. When collecting bark, they do not ring bark the trees, but only take bark from one side of the tree. When collecting roots, not all roots are removed from a tree, but a few are left so that the tree can continue to grow. After collecting at each point, beads are thrown at the plant to thank the ancestors and so that they can find other cures. Failure to follow these rituals is believed to anger the ancestors and make the medicine ineffective.

Although the traditional healers stress that they follow these rituals, there is increasing evidence of ring barking in some trees (e.g. *Araucaria heterophyta*) around Grahamstown. The healers claim that this ring barking is done by people coming from nearby areas like King Williams Town (who often come to collect plants from the Grahamstown area) and other people who are not traditional healers but simply gatherers who did not go through a formal training. Insufficient information on the local conservation status of these plants is available so it is difficult to assess which plants are in danger of becoming locally rare or extinct. The destructive harvesting of underground parts (16 instances in this study) and stems (two instances in this study) may be detrimental to local populations of these species, especially if demand increases. These resources may thus become scarce and some plants might go locally extinct, although at the time of this survey, the informants did not mention or complain about the scarcity of plant material.

Conclusion

There seems to be a comprehensive knowledge about the curative properties of many plants among the Grahamstown population and healers, and the list of taxa presented here is by no means exhaustive. During the course of the study, 24 plants were found to be used by both healers and customers or patients of the healers.

In spite of the development and spread of modern medicine in Grahamstown, traditional medicine is a popular alternative to address health problems in the area. Although the current importance and potential importance of medicinal plants has been locally and internationally recognised, there is still a need for further scientific and experimental studies to evaluate these crude extracts for their medicinal and pharmacodynamic properties, clinical usefulness and toxicological potential. These studies may result in the utilisation of these plants as crude drugs or as raw material in the manufacture of pharmaceutical products required in the promotion of primary health care. This could contribute towards increasing the availability of essential drugs at a much-reduced cost. In addition, populations of medicinal plants must be monitored in order to conserve them and aid in planning sustainable utilisation.

Acknowledgements — The authors wish to extend their sincere thanks to the following people: Mr Dipi, Miss Fihlani, Mrs Lindani, Adolphus, Zizi, Dlamini and all the participants for providing the information that was needed and for their patience throughout the meetings, Tony Dold, for his advice and assistance in data collection and plant identification. The staff of the Selmar Schonland Herbarium for their assistance in plant identification. The reviewers are sincerely thanked for providing additional information.

References

Bhat RB, Jacobs TV (1995) Traditional Herbal Medicine in Transkei. Journal of Ethnopharmacology **48**: 7–12

Broster JA (1982) Amaqgirha: Religion, Magic and Medicine in Transkei. Via Africa Limited, Goodwood

Daniel JB, Holleman W, Jacot Guillarmod A (1985) Grahamstown and its environs. Albany Museum, Grahamstown

Dold T, Cocks M (1996) Amayeza esiXhosa — Insight into Xhosa medicine. Eastern Cape Museum Magazine **9**: 4–9

Ellis CG (1986) Medicinal Plant Use — A Survey. Veld and Flora **72(3)**: 72–74

Everard DA (1988) Threatened plants of the Eastern Cape: a synthesis of collection records. Bothalia **18**: 271–277

Hilton-Taylor C (1996) Red Data List of South African Plants. National Botanical Institute, Pretoria, South Africa

Hirst MM (1990) The Healer's Art: Cape Nguni Diviners in the Townships of Grahamstown. Unpublished PhD Thesis, Rhodes University, Grahamstown

Hutchings A (1996) Zulu Medicinal Plants, an inventory. University of Natal Press

Lamla M (1981) Traditional Healers and their Medicine. Lumko Occasional paper 2. Cacadu, Transkei

Martin GJ (1995) Ethnobotany. Chapman and Hall, London

Metelerkamp W, Sealy J (1983) Some Edible and Medicinal Plants of the Doom Karoo. Veld and Flora **69**: 4–8

Omulokoli E, Khan B, Chhabra SC (1997) Antiplasmodal Activity of four Kenyan Medicinal plants. Journal of Ethnopharmacology **56**: 133–137

Smith A (1895) A Contribution to South African Materia Medica. Juta & Co., Cape Town

Watt JM, Breyer-Brandwijk MG (1962) The Medical and Poisonous Plants of Southern and Eastern Africa. Livingstone Ltd

Williams VL (1996) The Witwatersrand Muti trade. Veld and Flora **82**: 11–14

Williams VL (1997) Muti traders on the Witwatersrand, South Africa — an urban mosaic. South African Journal of Botany **63**: 378–381

Table 1: Some traditional medicinal plants used by the Xhosa in the Grahamstown area. Unless otherwise stated, information on previously recorded uses is taken from Hutchings (1996). Key to informants: 1 = Mrs Lindani, 2 = Mr Dipi, 3 = Miss Fihlani, 4 = Adolphus, 5 = Zizi, 6 = villagers and 7 = patients

Botanical Name	Xhosa Name	Usage, plant part and preparation	Informant/s	Previously recorded medicinal uses, chemistry and biological properties
AMARYLLIDACEAE				
Ammocharis coranica Ker-Gawl (BM 1)	sahlulahlobo	Used for bathing to heal body aches. The **root** is crushed and soaked in water. The infusion is added to bath.	2 & 3	Bulbs are used for serious afflictions thought to be caused by witchcraft. Bulbs reported to have alkaloids.
Haemanthus albiflos Jacq. (BM 2)	umathunga	To heal broken bones and body aches. The **roots** are crushed and mixed with water. The infusion is taken orally.	1, 2, 3, 4, 5, 6 & 7	Bulbs are used as emetics and for chronic coughs. Alkaloids have been reported from bulbs. Antiviral action has been reported from leaves and bulbs.
ARALIACEAE				
Cussonia spicata Thunb. (BM 3)	umsenge	To treat abdominal pains in women. The **tap root** is crushed and boiled in water. A tablespoon of the decoction is taken.	1	Root infusions are taken as emetics for fever. Emetics from the fruit, stem, root are taken for nausea. Root infusions used for uterine pain and venereal disease. Alkaloids were detected from root-bark.
ASPARAGACEAE				
Protasparagus africana (Lam.) Oberm. (BM 4)	mvane	The **root** is used to treat chest problems. A small quantity of the cool decoction is taken orally.	2 & 3	Shoot infusions are taken as emetics for nausea and colic. Teas from shoots are taken for pulmonary tuberculosis. Water extracts from the roots showed antimicrobial activity.
ASPHODELACEAE				
Bulbine alooides (L.) Willd (BM 5)	umanzabomvu	Used to treat pimples. The **root** is crushed and paste is applied to the face at night.	1, 2, 3, 4, 5, 6 & 7	Used as an antisyphilitic. Tubers are used for rheumatism. Tubers are reported to have 'blood purifying' properties and produce depression, acidity and flatulence.

Botanical Name	Xhosa Name	Usage, plant part and preparation	Informant/s	Previously recorded medicinal uses, chemistry and biological properties
Bulbine asphodeloides (L.) Willd (BM 6)	yakayakana	Used to expel worms in children. The **root** is crushed and boiled in water. A small amount of the decoction is taken orally.	2 & 3	Leaves are used for rash and sores. Tuber decoctions are used as an antispasmodic to quell vomiting and diarrhoea.
ASPHODELACEAE				
Kniphofia uvaria (L.) Oken (BM 7)	ixonya	An infusion of the **roots** is taken orally to treat infertility in women.	1, 2 & 3	Crushed rhizomes are used in enemas for painful menstruation and for itchiness during menstruation. Screening tests gave positive antibiotic results with *Neurospora erassa*.
ASTERACEAE				
Aster bakeranus Burtt Davy ex C.A. Sm. (BM 8)	ikhanka	To relieve piles. **Roots** are crushed and boiled in water. A small amount of the decoction is taken.	2 & 3	Roots are used in enemas for stomach complaints. Root decoctions are used for chronic coughs, to clean nostrils and for snakebite. Roots and tubers were found to have a very acrid resinous body.
Bidens pilosa L. (BM 9)	umhlabangubo	To treat infertility in women. The **leaves** are crushed and boiled in water. A teaspoon of the decoction is taken orally.	1	Hot leaf and root infusions are taken for stomach complaints. Burnt seeds are rubbed into scarifications on sides of the body to relieve pain. Polyacetylene isolated from leaves has reported to show antimicrobial activity and antifungal action on wounds and ulcers. Leaf infusions are used to promote conception by the Vhavenda.
Senecio carnosus Thunb. (BM 10)	umfan'othenqi	Used to treat ear infection. **Leaves** are crushed and mixed with a drop of warm water. A drop of the infusion is put into the ear.	1	
CAPPARACEAE				
Boscia oleoides (Burch. Ex D.C.) Toelken (BM 11)	uwetsali	Used externally for pain. A **root** is grated and tied over the painful area until the area feels warm (known to be dangerous if left for a long time).	2 & 3	Dried roots are reported to have been used effectively for bots in horses (Watt and Breyer-Brandwijk 1962).
COMBRETACEAE				
Combretum caffrum (Eckl. & Zeyh.) Kuntze (BM 12)	umdubu	Used to treat heart problems. The **root** is crushed and boiled in water. A teaspoon of the decoction is taken.	2 & 3	Root bark is used as a charm for harming an enemy. Combretastanin, an antineoplastic and antimitotic agent has been isolated.
CUCURBITACEAE				
Kedrostis nana (Lam.) (BM 13)	uthuvishe	Used to treat diabetes. The **root** is crushed and boiled in water. A small amount of the decoction is taken.	2 & 3	The runner and roots have been found to be poisonous to sheep and rabbits. Hydrocyanic acid has been found in the tuber (Watt and Breyer-Brandwijk 1962).
DRACAENACEAE				
Sanseviera hyacinthoides (L.) Druce (BM 14)	uskholokotha	To treat ear infection. The **leaves** are warmed in fire and crushed (whilst still warm). The warm (not hot) juice is put into the ear.	1	Warmed leaf sap is used for earache.
EUPHORBIACEAE				
Jatropha capensis (Sond.) (BM 15)	umsebhe	Used for bathing to heal body aches. The **root** is crushed and mixed with water. A cup of the mixture is added into bathing water.	2 & 3	Sap has been used for tuberculosis and other respiratory conditions, and also applied to ringworm (Watt and Breyer-Brandwijk 1962).
GERANIACEAE				
Pelargonium sidioides DC. (BM 16)	incwayiba	Used to treat upset stomach (air in the intestine) in babies (as Gripe water). The **root** is crushed and mixed with water. A teaspoon of the red infusion is taken.	1, 6 & 7	Used for gonorrhoea, diarrhoea and dysentery. Used to treat prolapsed rectum. Root decoctions are taken for severe diarrhoea and for babies with stomach ailment known as 'intsila'. Coumarins have been found in roots.
HYPOXIDACEAE				
Hypoxis hemerocallidea Fisch. & C.A. Mey. (BM 17)	inongwe	Used to treat pimples (associated with bad luck) and internal wounds. For pimples, **corms** are crushed and paste applied to face at night. For internal wounds, the corm is boiled, and a small amount of the decoction taken.	1, 2, 3, 4 & 5	Corm infusions are administered as emetics for dizziness and mental disorders. Juice from the root is applied to burns.
LAMIACEAE				
Leucas capensis (BM 18)	unomfiyo	Used to treat nose blockage. Fresh **leaves** are crushed and mixed with a drop of water. A drop is put into the nose.	2 & 3	Other *Leucas* species are used for feverish conditions in children.

Botanical Name	Xhosa Name	Usage, plant part and preparation	Informant/s	Previously recorded medicinal uses, chemistry and biological properties
MESEMBRYANTHEMACEAE *Carpobrotus edulis* (L.) N.E. Br (BM 19)	igcukuma	Used to treat mouth ulcer. The **leaves** are crushed and the paste is applied on the wounds.	1	Used to make enema for children. Used to treat allergies, diabetes and sore throats. Juice from leaves is used for diphtheria and thrush and digestive troubles, diarrhoea and dysentery. Catchecol tannins, Malic and citric acids and their calcium salts have been found in the sap of leaves and stems. Red-violet betalains and leucoanthocyanins have also been isolated.
PTAEROXYLACEAE *Ptaeroxylon obliquum* (Thunb). Radlk. (BM 20)	umthathi	The **stem (wood)** is used to treat asthma. A spoon of the decoction is taken.	2 & 3	Bark is used for rheumatism and arthritis. Saponins, volatile oils, tannins, resin, fat, glycosides and an alkaloid with antidepressant properties have been isolated from bark.
RHAMMACEAE *Ziziphus mucronata* Willd. (BM 21)	umlahlankosi/ umphafa	The **root** is used to treat internal throat wounds and the **stem (wood)** to treat external wounds. The root is cooked in water. A spoon to half a cup of the decoction is taken. A dry stem is grated and the powder is applied to the wound.	2 & 3	Hot infusions are taken as emetics for chronic coughs. Leaf and bark infusions are taken for respiratory ailments. Steam baths from the bark are used to purify complexion. Peptide alkaloids have been isolated from the bark and leaves. Plant extracts have been reported to show antifungal activity against *Candida albicans*.
SALVADORACEAE *Azima tetracantha* Lam. (BM 22)	igcegceya	Used for steaming and treatment of ear infection. For steaming, the **leaves** are boiled. For the ear, the leaves are crushed and mixed with a drop of warm water. A drop is put into the ear.	2 & 3	Sap is used for toothaches (inserted into the wound after tooth removal), as a disinfectant and for snakebite. Four dimeric piperidine alkaloids and various other compounds, including terpenoids, glutinol friedelin lupeol and beta-sitosterol have been isolated from bark.
STERCULIACEAE *Hermannia althaeoides* (BM 23)	bangalala	To treat impotence in men. The **roots** are crushed and boiled in water. An decoction is taken orally.	2 & 3	
Lichen (grows on rocks) (BM 24)	mthafathafa	Used to treat gonorrhoea. The **fresh plant** is crushed and mixed with water. The infusion is taken orally. The plant is also dried over fire and crushed. The powder is applied to the wound's infected area.	1	Usnic acid has been found in unspecified lichens, and has antibiotic activities (Watt and Breyer-Brandwijk 1962).